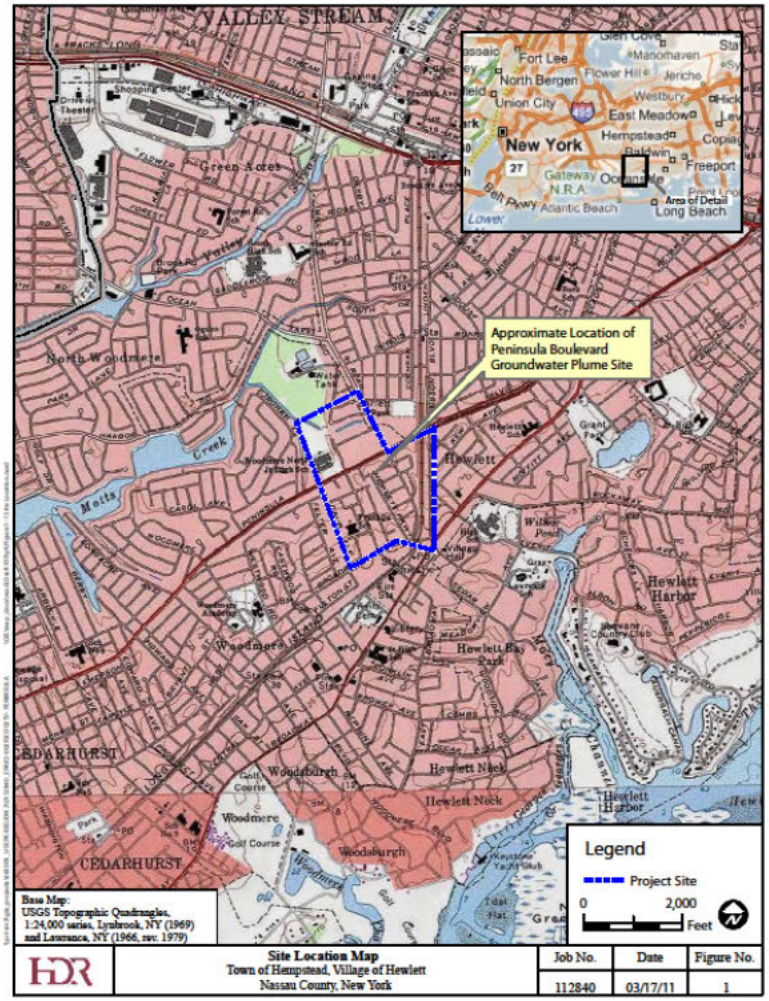
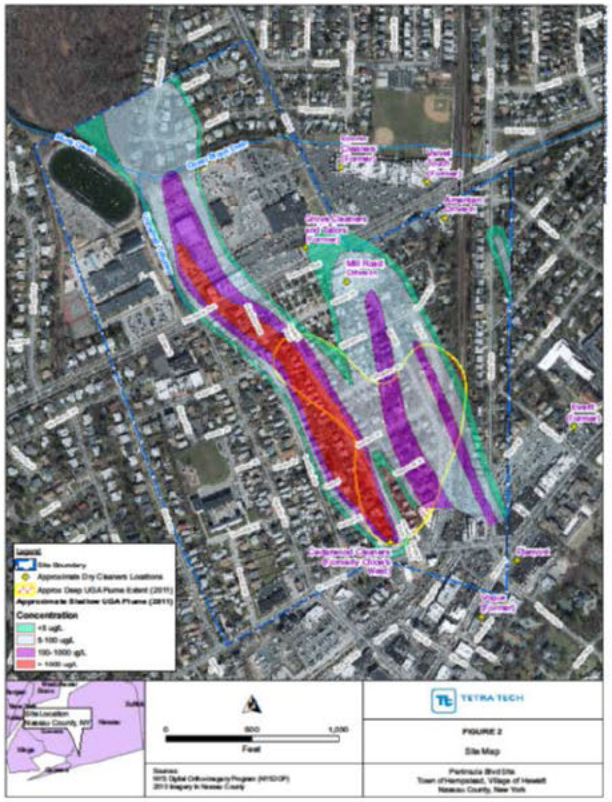
Peninsula Boulevard Groundwater Contamination Superfund Site
Superfund Response Action
Priority Panel Review

Site Location Map



Site History

- The site is located in Nassau County, Long Island, New York
- The site is a area of groundwater contaminated with PCE in a dense residential and commercial neighborhood
- The New York American Water Co operates a well head 1500 ft N of the site
- The site was placed on the NPL in July 2004.



Site Risks

Risk from Ingestion of Groundwater		
Exposed Population	**Excess Lifetime Cancer Risk**	**Hazard Quotient**
future adult resident	2×10^{-1}	300
future child resident	2×10^{-1}	600
future commercial worker	2×10^{-2}	50

EPA's Overall Approach for Site

- OU-1: ROD signed on September 30, 2011

  Extraction of the groundwater via pumping and ex-situ treatment of the extracted groundwater, and

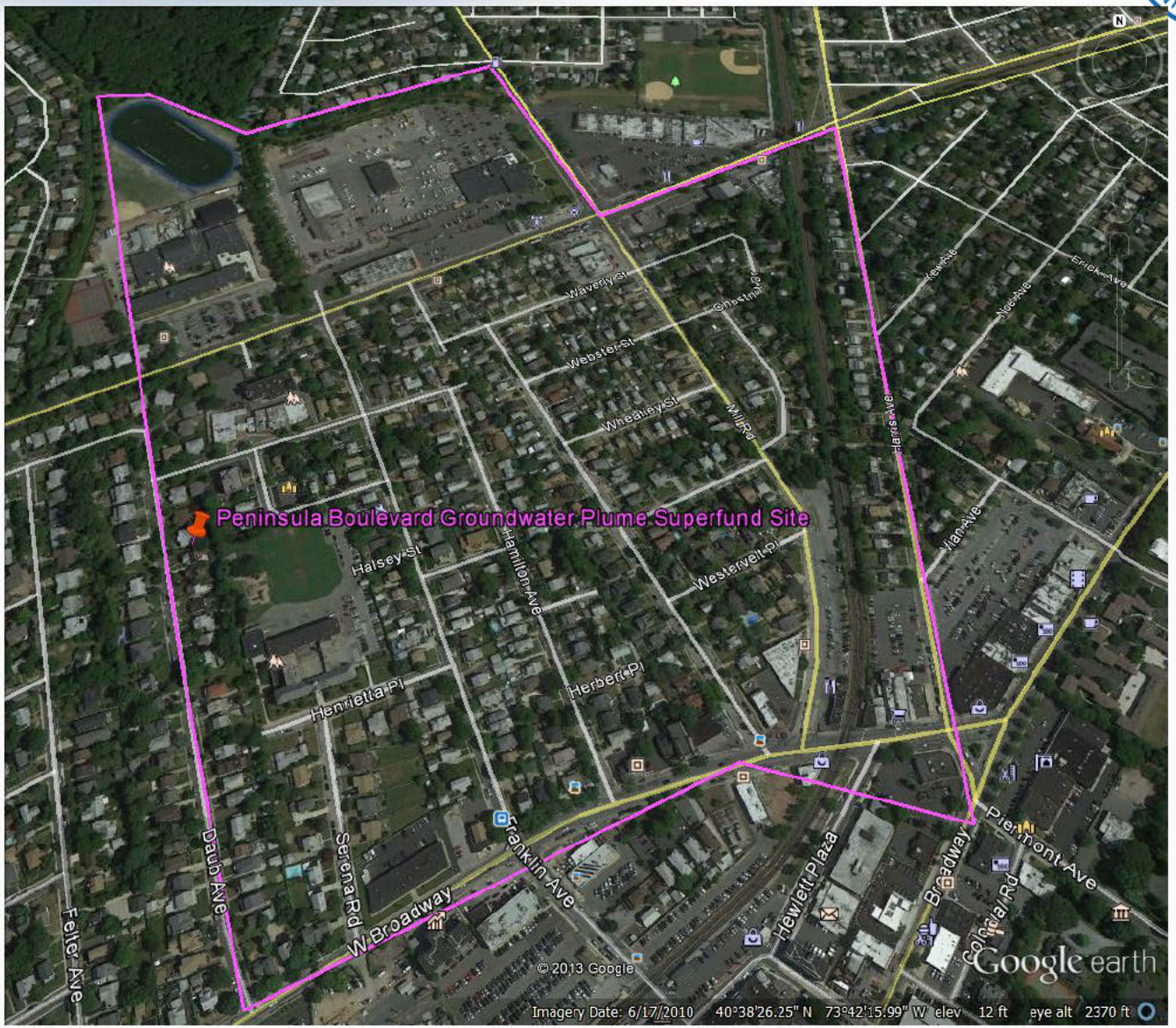
  in-situ chemical treatments targeting areas containing high concentrations of PCE

- OU-2: RI/FS on-going

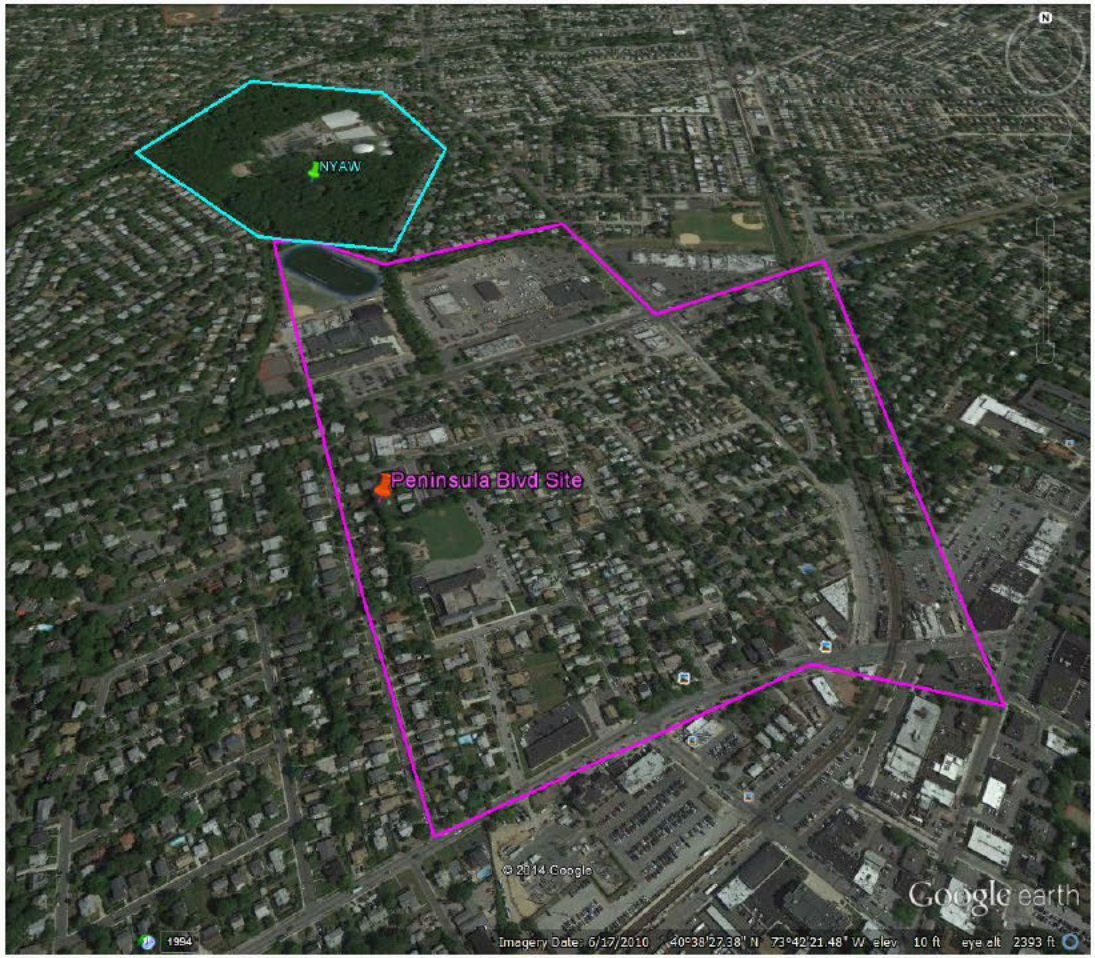
  source delineation at three potential sources

- OU-1: Ex-Situ RD: difficult finding location for construction of treatment facility

Site Boundaries—Hewlett, NY

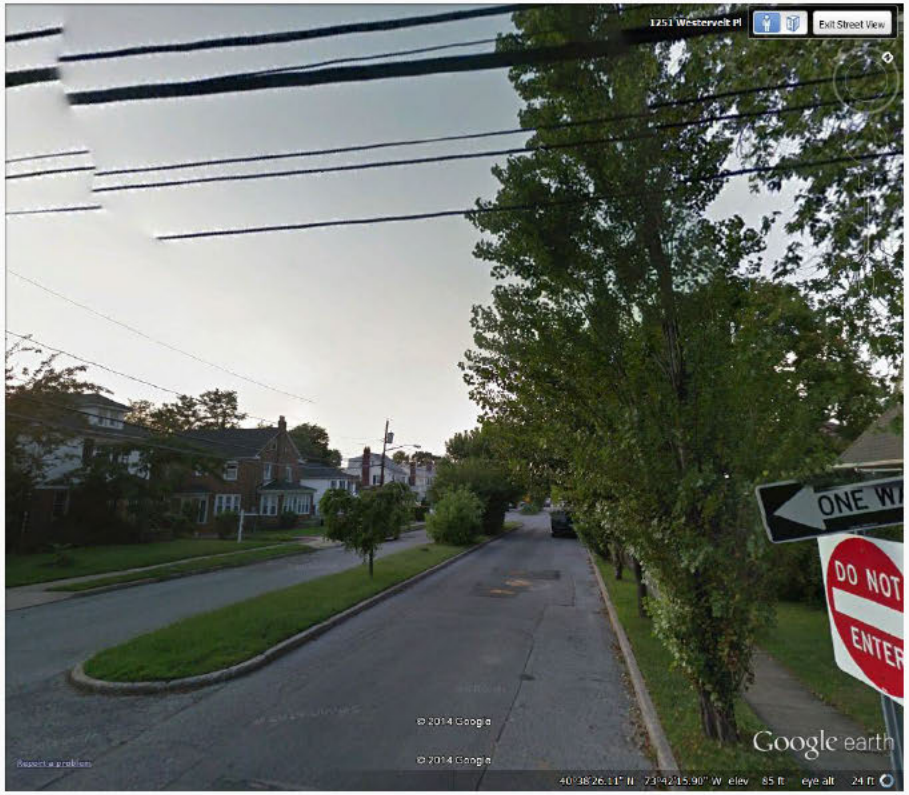


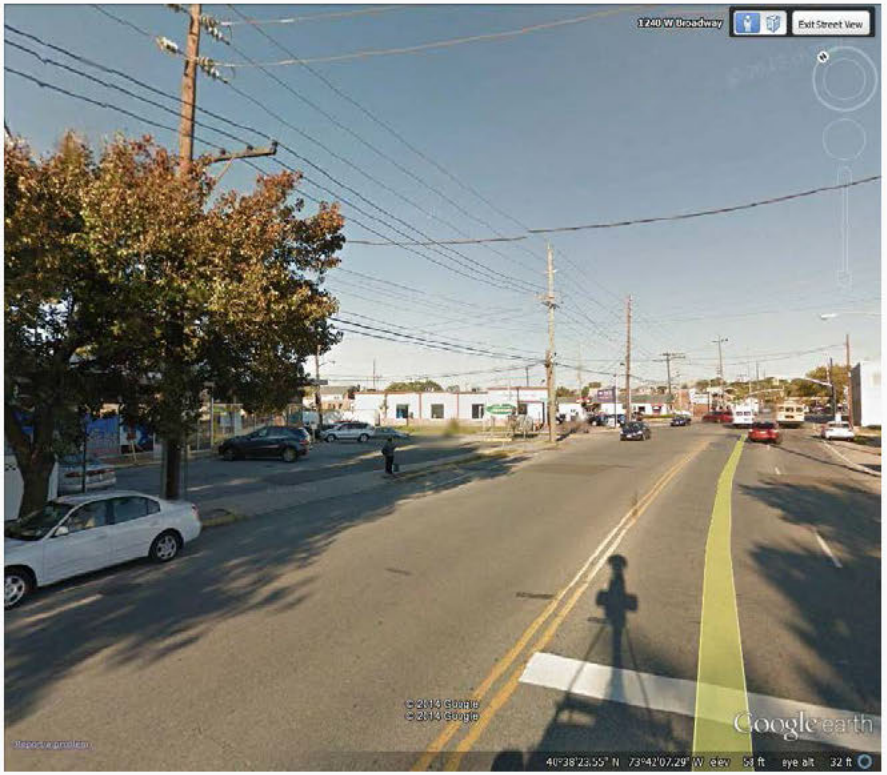
NY American Water Well Field # 5



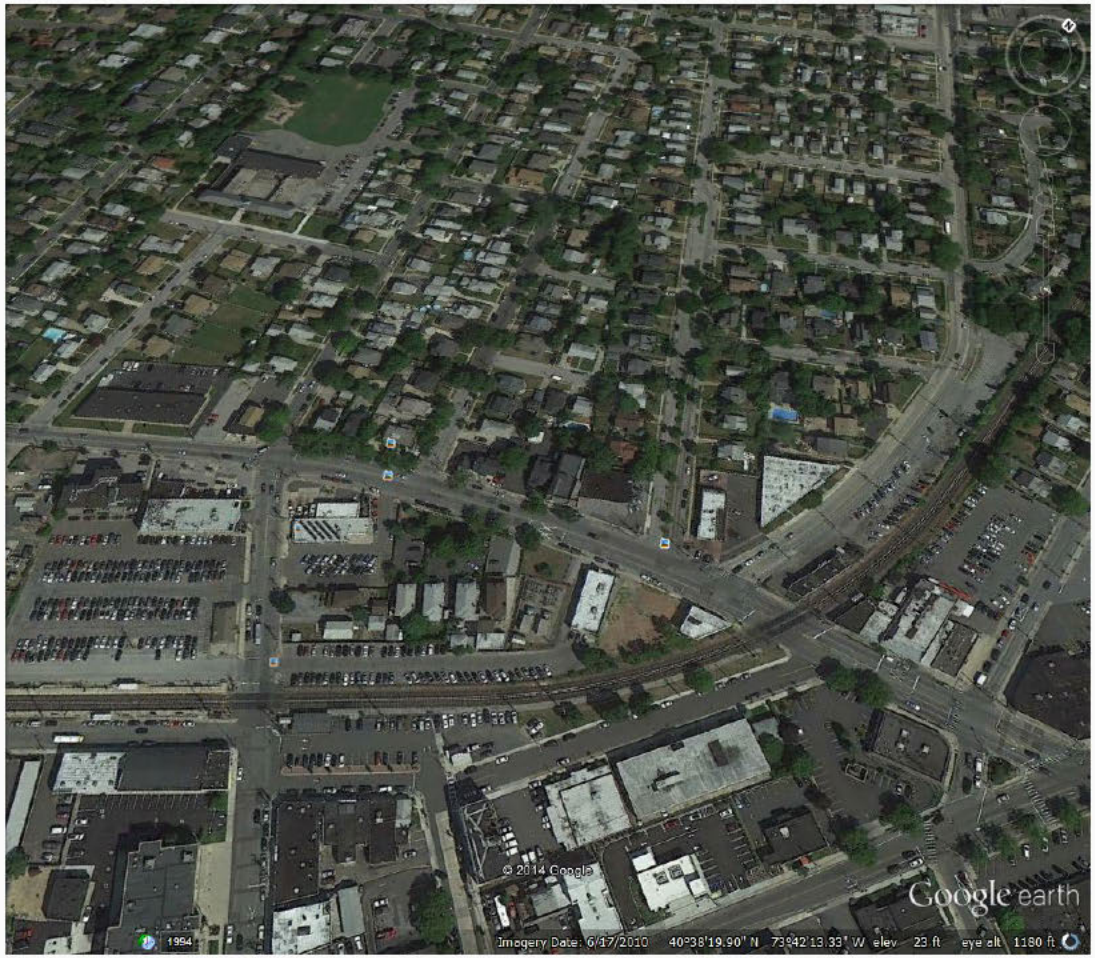
Residential Neighborhood

Street View: Hewlett Parkway, West Broadway





Mixed Residential & Commercial Properties



Suspected Sources: Dry Cleaners

Soil Vapor Intrusion Sampling

Removal Action
1 Radon System Installed

Phased Approached to EPA's Selected OU1 Remedy

- Initial Phase: *In-Situ ISCR*

- Secondary Phase: *Ex-Situ pump & treat*

[once location is obtained to construct treatment facility] with MNA in areas of low contaminant concentrations

- ISCR will complement & improve the effectiveness of P&T

In-Situ RD: 2 Components

1) Injection of Enhanced Bioremediation Material, specifically, LactOil™ into four permanent 6-inch wells (two shallow and two deep) at two locations followed by post-injection monitoring.

2) Injection of ISCR material EHC®, which is composed of controlled-release carbon, zero valent iron (ZVI) particles and nutrients, using Direct Push Technology into injection points located along Westervelt Place near the intersection of Hewlett Parkway.

Component 1: ISCR Injections and Recirculation Events:

- Install 5 permanent wells in 2 areas to distribute biological amendments.
- Install new temporary wells to monitor groundwater during in-situ treatment.
- Perform monitoring, sampling, and analysis.
- Perform short-term recirculation events until P&T (Ex-Situ Remedy) system is operational.

Component 2: ISCR Permeable Reactive Barrier

- Install 1 new PRB across plume axis halfway between 2 areas selected for injection of amendments.
- Inject ISCR slurry into closely-spaced borings or points. Length is roughly 175 feet and will traverse one residential property.
- Extend existing PRB along Westervelt Place. Reconstructed barrier will be about 220 feet long.
- Barriers will target groundwater mass flux or discharge through the targeted treatment area (i.e., PCE concentrations > 10,000 µg/L).
- Conduct post-barrier monitoring until P&T system is operational.

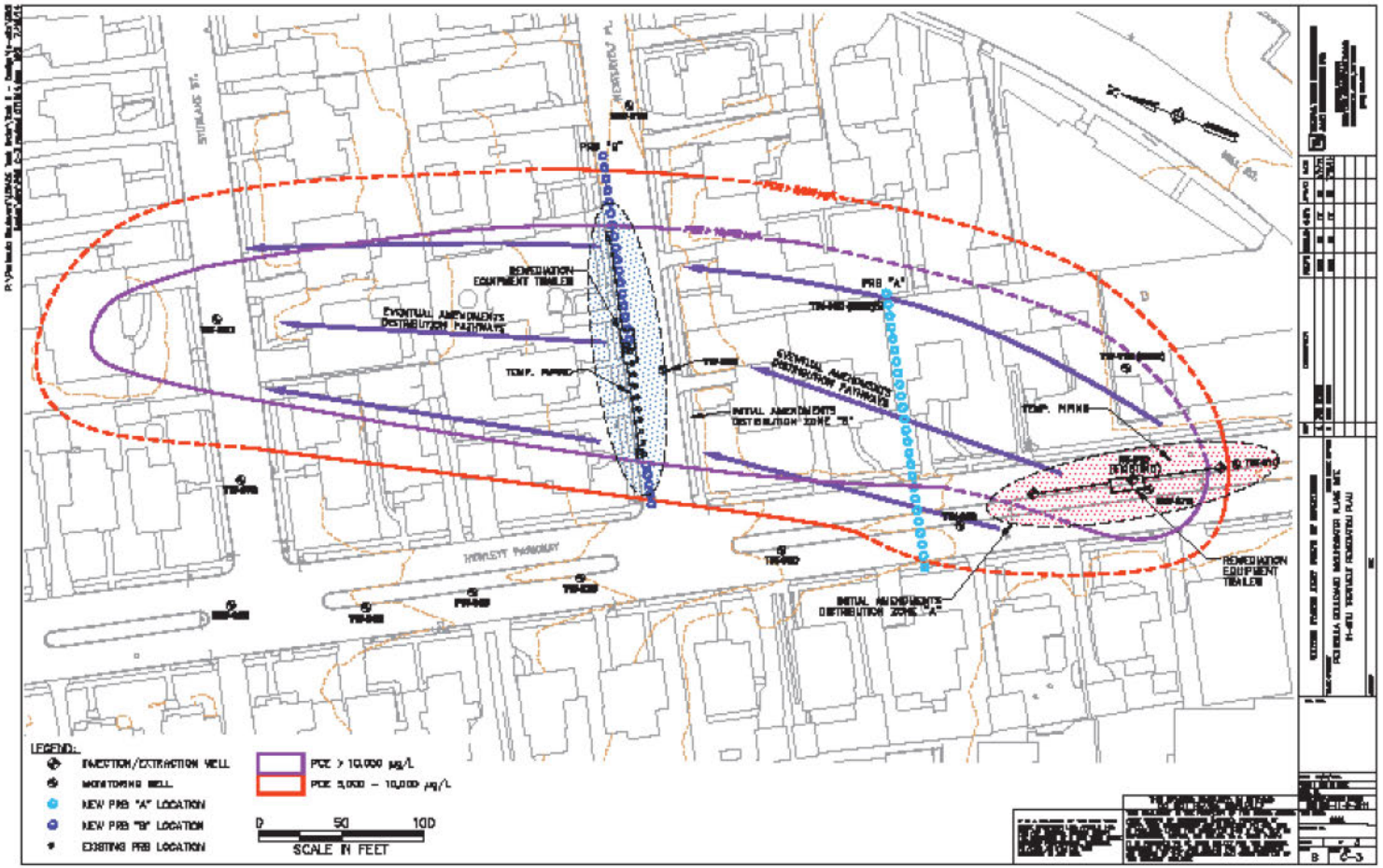
Pre-Design Investigation

- Three pumping wells (PW-01S, PW-02S, and PW-01D) and three observation wells (OW-01S, OW-01D, and TW-09) for completion of the aquifer testing.
- For the in-situ treatability study, two permanent injection wells (IW-01S and IW-01D) were installed for the injection of LactOil, and twelve temporary 2-inch polyvinyl chloride (PVC) wells were installed for monitoring/observation.

Treatability Testing

- Conducted in-situ treatability testing to determine implementability and optimal design of selected in-situ groundwater remedy.
- Provided data to aid in design, installation, and operational parameters for the remedy.
- Installed shallow/deep UGA monitoring wells and 2 injection wells.
- Performed groundwater sampling from existing monitoring wells and new in-situ treatability injection and monitoring/observation wells.

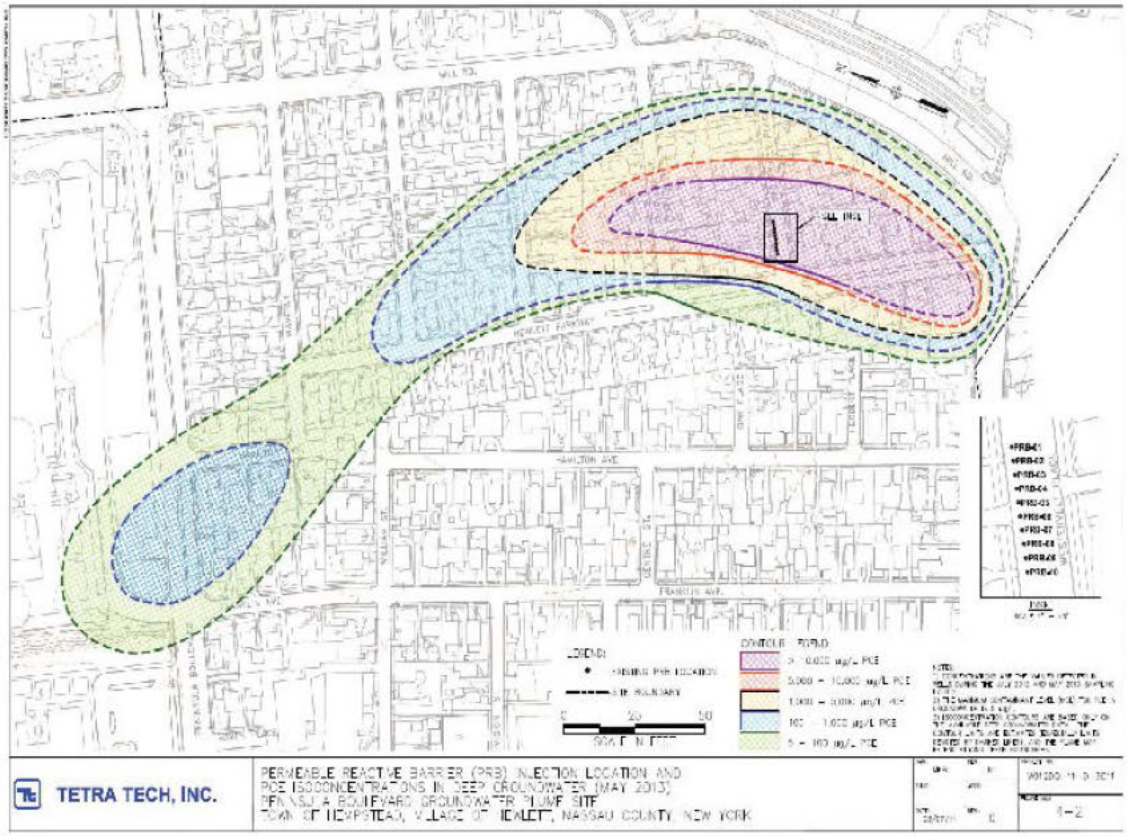
In-Situ RD Target Area



Injection Well

RD Field Work

PRB locations & PCE concentrations in deep UGA



In-Situ RD: Next Steps

- Install five new remediation wells in two separate areas for distribution of biological amendments.
- Install temporary PVC wells for monitoring groundwater concentrations during in-situ treatment.
- Perform base-line monitoring, sampling and analysis.
- Initially distribute biological amendments into the two targeted areas.
- Install a permeable reactive barrier (PRB) at the area approximately halfway between the two injection areas.
- Extend the existing PRB along Westervelt Place.
- Conduct post-injection and post-barrier monitoring for three years.

Remedy Implementation Schedule

FY 2015:

- Install five new wells & temporary wells
- Perform base-line monitoring
- Initially distribute biological amendments into the two targeted areas.
- Install 2 permeable reactive barrier (PRB)
- Extend the existing PRB along Westervelt Place.

FY 2016: Year 2 O&M

FY 2017: Year 3 O&M

In-Situ Remedy Implementation Funding Needs by Fiscal Year

FY 2015	Construction Capital Costs Year 1 O&M	$ 1,022,000 $ 650,980 $1,672,980
FY 2016	Year 2 O&M	$260,000
FY 2017	Year 3 O&M	$260,000

Ex-Situ P&T Remedy Costs and Schedule

- Capital Cost $6,758,000
- O&M Year 1: $755,000
- 95% RD completed in 1st Qtr. FY 2016
- Funding in FY 2016: $4,000,000
- Funding in FY 2017: $2,758,000
- Funding in FY 2018: $755,000